

DOCUMENT RESUME

ED 084 758

EC 060 637

AUTHOR Brace, D. K.
TITLE Motor Fitness of Mentally Retarded Boys to National Age Norms.
PUB DATE 18 Mar 61
NOTE 4p.; Paper presented at the AAHPER National Convention (Atlantic City, March 15, 1961)
EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS Adolescents; *Educable Mentally Handicapped; *Exceptional Child Research; *Males; Mentally Handicapped; *Physical Fitness; *Testing

ABSTRACT

The study compared the physical fitness of 65 mentally retarded boys (mean age 14-years, mean IQ 60) at Austin (Texas) State School with national age scales for boys of the same chronological ages on the American Association for Health, Physical Education and Recreation Youth Fitness Test, which measures strength, speed, agility, power, coordination, and endurance. The mentally retarded Ss scored substantially below national age norms. Other findings were that the percentage of scores of mentally retarded boys, in the normally expected quartiles, were best in sit-ups and poorest in pull-ups, jumping, and running events; that there was a strong tendency for retarded boys to make poorer scores on their second tries than on their first attempts; that mentally retarded boys were particularly poor in running events; and that coefficients of correlation were low between IQ and various combinations of test scores. (Author)

EC060637

ED 084758

INFORMATION AND RESEARCH UTILIZATION CENTER
IN PHYSICAL EDUCATION AND RECREATION FOR THE HANDICAPPED
1201 Sixteenth Street, N.W.
Washington, D.C. 20036

Brace, D.K. Motor Fitness of Mentally Retarded Boys Relative to National Age Norms. Paper presented to Research Section, American Association for Health, Physical Education, and Recreation, National Convention, Atlantic City, New Jersey, March 15, 1961.

The purpose of this study was to compare the physical fitness of a group of mentally retarded boys ($N=65$; $CA=\bar{X}$ 13.6; $IQ=\bar{X}$ 60.3) at Austin (Texas) State School with national age scales for boys of the same chronological ages on the seven test items of the AAHPER Youth Fitness Test, measuring strength, speed, agility, power, coordination, and endurance. Mentally retarded subjects scored on the average substantially below national age norms. Other findings were (1) the percentage of scores of mentally retarded boys, falling in the normally expected quartiles, were best in sit-ups and poorest in pull-ups, jumping, and running events; (2) there was a strong tendency for retarded boys to make poorer scores on their second tries than on their first attempts; (3) mentally retarded boys were particularly poor in running events and evidently could profit from much more vigorous activity; (4) coefficients of correlation were low between IQ and various combinations of test scores.

Descriptors: Mentally Retarded Boys; AAHPER Youth Fitness Test; Speed; Strength; Agility; Power; Coordination; Endurance; Sit-ups; Pull-ups; Jumping; Running; Physical Fitness

Distributed: ERIC (Exceptional Children)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

EC 060 637

INFORMATION AND RESEARCH UTILIZATION CENTER
IN PHYSICAL EDUCATION AND RECREATION FOR THE HANDICAPPED
A Project of AAHPER's Unit On Programs for the Handicapped

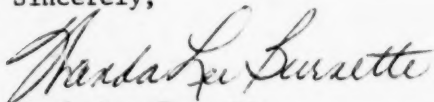
November 28, 1973

Carl F. Oldsen
Assistant Director
CEC Information Center on Exceptional Children
The Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

Dear Dr. Oldsen:

Enclosed is an abstract along with the paper presented by Dr. D. K. Brace at the AAHPER National Convention in Atlantic City, March 15, 1961, entitled, Motor Fitness of Mentally Retarded Boys Relative to National Age Norms. This is being sent to you for consideration in processing through the ERIC system.

Sincerely,



Wanda Lee Burnette
Administrative/Program Assistant

Enclosure

available only through eric

Motor Fitness of Mentally Retarded Boys
Relative to National Age Norms

3/18/61

D. K. Brace
The University of Texas

*Presented to Research Section
AAHPER, Atlantic City, March 15, 1961*

Purpose

It was the purpose of this study to investigate the physical fitness of a group of mentally retarded boys relative to national age scales for boys of the same chronological ages in terms of gross bodily activity involved in seven tests of strength, speed, agility, power, coordination, and endurance. Certain relationships with intelligence and other data on the mentally retarded boys are involved in this and subsequent reports.

Review of Literature

Apparently most of the testing of physical abilities of the mentally retarded has involved tests of "motor proficiency" in terms of accuracy, precision, and quickness of response mainly with fine muscle movements. Such studies are those by Claupon³, Distefano, Ellis and Sloan⁴, Heath⁶, Johnson⁷, Sloan^{10,11}, Rabin⁹. Studies in which tests of gross bodily activity are used, including some used in the present study, include those by Brace², Francis and Rarick⁵, and Malpass⁸. In general, higher relationships are found between motor fitness tests and I.Q. than is the case with normal population groups of the same ages and sex. There has been found marked relationship between athletic ability as measured by athletic index and motor learning among mentally retarded youth.

Apparently none of the previous studies have compared the status of mentally retarded boys with that of normal boys of the same chronological ages, in terms of the national age percentile scales of performance on the seven physical fitness tests used in this study.

Subjects

The subjects used in the study were 65 boys at the Austin State School* whose data are given in Table I, p. 3.

Procedure

The tests and the percentile age scales used are those given in the Youth Fitness Test Manual¹. The tests are pull-ups, sit-ups, shuttle-run, 50 yard dash, standing broad jump, softball throw for distance, and 600 yard run-walk. The tests were given in the School gymnasium and fields at intervals during October, November, and December, 1960. After practice trials the boys were scored on two trials on each test. For the pull-ups, sit-ups, shuttle-run, and standing broad jump, both trials were given on the same day the test was administered. Usually both trials on the 50 yard dash and the softball throw for distance were given at one testing. The two trials of the 600 yard run-walk were given on different days. Data as to date of birth, mental age, I.Q., etiology, social age, and other information to be used later were obtained from the School.

Findings

1. The mentally retarded boys scored on the average materially below the national age norms as shown in Table II. Eighty per cent of all scores fell below the median of the national scales.

*The excellent cooperation of authorities at the Austin State School made this study possible and is greatly appreciated.

2. The percentage of scores of the mentally retarded boys falling in the normally expected quartiles of the age scales were best in the sit-ups and poorest in the pull-ups, jumping, and running events. This was particularly true of the younger boys.
3. There was a strong tendency for the boys to make poorer scores on the second try than was made on the first trial. Thirty-eight boys did less on the second trial by an average of 30 percentiles on the seven tests. The average for the total group was 6.8 percentile score less on second trials than on first trials. The larger losses were made by the older boys.
4. The mentally retarded boys were particularly poor in the running events, and evidently could profit by much more vigorous activity.
5. Coefficients of correlation were low between I.Q. and certain combinations of test scores, i. e.; average score on all tests (.1384); Athletic Index, dash, jump, and throw (.1879); items involving strength, pull-up, sit-up, jump, throw, (.0016); running events, dash, shuttle-run, run-walk, (.1606); gain of second over first trial (.0571); and average difference between trial on all tests (.1494).

References

1. American Association for Health, Physical Education and Recreation, Youth Fitness Test Manual, Washington, D.C., The Association, 1958.
2. Brace, D. K., "Motor Learning of Feeble-Minded Girls," Research Quarterly, 19:269-275, December, 1948.
3. Clauson, J., "Patterns of Sensory-Motor Skills in Retardates," Training School Bulletin, 56:58-61, August, 1959.
4. Distefano, Michael K., Jr., Norman R. Ellis, and William Sloan, "Motor Proficiency in Mental Defectives," Perceptual and Motor Skills. (Southern University Press), 8:231-234, 1958.
5. Francis, Robert J., and G. Lawrence Rarick, Motor Characteristics of the Mentally Retarded, (Cooperative Research Monograph No. 1), Washington, D. C., U. S. Dept. of Health, Education, and Welfare, 1960.
6. Heath, S. R., Jr., "The Relation of Railwalking and Other Motor Performances of Mental Defectives to Mental Age and Etiological Types," Training School Bulletin, 50:119-127, 1953.
7. Johnson, G. D., and R. J. Capabianco, "Physical Condition and Its Effect Upon Learning in Trainable Mentally Retarded Children," Exceptional Children, September, 1959.
8. Malpass, Leslie F., "Motor Proficiency in Institutionalized and Non-Institutionalized Retarded and Normal Children," American Journal of Mental Deficiency, 64:1012-1015, May, 1960.
9. Rabin, H. M., "The Relationship of Age, Intelligence, and Sex to Motor Proficiency in Mental Defectives," American Journal of Mental Deficiency, 62:507-516, 1957.
10. Sloan, William, "Motor Proficiency and Intelligence," American Journal of The Mentally Retarded, 55:394-406, 1951.
11. Sloan, William, "The Lincoln-Oseretsky Motor Development Scale," Genetic Psychological Monographs, 51:183-252, 1955.
12. Shotick, A., and C., Thate, "Reactions of a Group of Mentally Handicapped Children to a Program of Physical Education," Exceptional Children, January, 1960.

TABLE I
MEAN DATA FOR MENTALLY RETARDED BOYS

Age	No.	Age at entrance to Sch.	Months in State School	I.Q.	Height	Weight	Athletic Index*	Four Strength Tests	Three Running Tests	Total Score on Seven Tests
10	8	9.1	15.2	60.5	4'-6"	75	38.4	13.5	13.0	20.1
11	6	10.1	16.1	59.8	4'-8"	84	17.8	18.2	7.7	11.8
12	4	10.2	31.0	56.5	5'-0"	110	109.0	45.2	20.7	34.7
13	8	10.2	38.5	61.2	5'-1"	98	39.8	16.1	10.4	13.7
14	16	12.2	24.7	61.9	5'-4"	116	88.2	42.7	25.4	35.9
15	10	12.7	30.3	60.9	5'-5"	119	66.5	38.3	23.1	35.6
16	6	15.3	11.7	61.2	5'-7"	147	48.7	20.2	9.8	20.0
17	7	14.6	36.8	55.8	5'-5"	133	59.1	34.7	18.1	27.8
Mean Age	13.6	11.9	25.8	60.3	5'-2"	110	60.8	30.7	17.5	26.6

*Fifty yard dash + standing broad jump + softball throw (percentile scores).

TABLE II
PERCENTAGE OF SCALE SCORES ON SEVEN TESTS FALLING IN EACH QUARTILE OF NATIONAL AGE PERCENTILE SCALES

Quartile	Physical Fitness Tests							Mean Percentages				
	Pull-Ups	Sit-Ups	Shuttle-Run	50 Yard Dash	Standing Broad Jump	Softball Throw	600 Yard Run-Walk	Total All Tests No.	%	Athletic Index Dash Jump Throw	Pull-Up Sit-Up Jump Throw	Dash Shuttle Run-Walk
4th	20.0	26.2	1.5	3.1	12.3	4.6	1.5	45	9.9	32.3	4.6	0
3rd	10.8	18.5	4.7	6.2	10.8	6.2	9.3	43	9.5	9.2	16.9	7.7
2nd	13.8	26.1	20.0	20.0	15.4	7.7	15.4	77	16.9	15.4	29.2	12.3
1st	55.4	29.2	73.8	70.7	61.5	81.5	73.8	290	63.7	43.1	49.3	80.0
% Below Median	69.2	55.3	93.8	90.7	76.9	89.2	89.2	367	80.6	58.5	78.5	92.3